35/
ST

Ack. 12/1/06.

NETHERHALL.
LARGS.
AYRSHIRE.

11th Jan. 1906.

Dear Mr. Strahan Smith

In answer to your letters of Dec. 30, and Jan. 8, (to the former of which my answer was delayed by pressure of work), I find The Engineering Supplement to The Times very full of interesting and instructive matter. It will, I am sure, be exceedingly useful to the Public.

Yours truly

Kelvin

advised at Cambridge
than to let it be the
subject of a Rede Lecture.
I am very hard at
work trying to complete a
volume in print of my Bal-
timore Lectures" which were
given (20 Lec[s] in 18 days) in
the Johns Hopkins Univer-
sity (Baltimore) October 1884, taken
down in short-hand and
published in a papyrograph vo-
lume there in November
(300 copies) when I was home
for Univ. work in Glasgow.
I promised to bring them
out in print as soon
as possible, which I hope
may be 3 months hence.
I shall send you a copy, tho'
I am afraid they will be

DSI

Dec 28, 1902

NETHERHALL.
LARGS.
AYRSHIRE.

Dear Hugh
I was very glad to
get your Xmas letter
not too late for good
wishes which come
wirelessly at the
instant of their for-
mation without even
the transmissional
delay of the electric
waves. You are quite
right about Marconi.
He has largely extend-

the space of action of the tour-erier. It certainly is a marvelous achievement to get perceptible results due to electric action 3000 miles away, and to give news simultaneously to every place on land or sea within a "small circle" of that radius on the earth's surface. But we need not take that as the limit or a limit, and

DSI

it is not now unreasonable to expect that the great circle may be reached, and small circles beyond it, as far as the antipodes. Twenty years ago any such expectation would have been considered wild madness. This brings me to your other subject, Osborne Reynolds's* bag of wheat or sand to explain gravitation on the Universe. It is a pity they were not better

* this sand under foot on the sea-shore is, as you say very good and interesting

very unreadable.

NETHERHALL.
LARGS.
AYRSHIRE.

We were very sorry
Mrs Blackburn was
not well enough to
come and see us here.
I hope she is now much
better. Give her our
thanks for her beau-
tiful Christmas Card
(quite beautiful) and
our love and best
wishes for a good
New Year, and the

same to yourself.
I sympathise with
you in not hearing
as well as we used
to hear. I hope you
are finding the semi-
circular canals mor-
ally automatic again
and are feeling well
considering 80, which
is coming near to me
too. Always Your affectionate

Kelvin

DSI

DSI

no title can be assumed.

We were very sorry to hear of the death of your nephew, Adam. He served his country well; but it is sad that he is so soon taken away.

The day after I had the letter from Lord Salisbury we had the sad telegram from Madeira, of which you have heard by Ladz.

I hope we shall see you and Mrs Blackburn here some time before long.

Your affectionate William Morris

Jan 6/92

THE UNIVERSITY,
GLASGOW.

Dear Hueffer

Your letter came yesterday. It was November/42, or more probably Dec. when we first broke the ice together at Sheep-green but it is really a very long 50 years since (in Andrew Stewart's rooms) we first met! Our readings of Faust in Bishop's Wortel came I think in the terre

after the breaking of the ice. There certainly has been no voice in our friendship ever since.

We are very glad that you are pleased with Lord Salisbury's advice to the Queen as to this new year's gift, and thank you and all the others at Roshven for your congratulations. What a happy Christmas you have had!

In answer to "the Garter" asking what title I would "assume" I said I would like to have "Kelvin" as association with the University and City of Glasgow in which my home has been for sixty years and in much of almost all my work has been done. I hope you approve and title the Queen's [approves

DSI

Nov 29/82

THE UNIVERSITY,

GLASGOW.

Dear Hughes

I ought to have
thanked you long
ago for your last
letter telling me about
your mother. We were
glad to hear to read an
account as we could
steer give but thought
it very hard that
the poor fellow
should have been
left to starve in the

canal boat except
for the good Bluejacket.
We have heard from
time to time since
from Pam and via
Lady and were sorry
that there had been
relapses. I hope
you have now
altogether more satis
factory reports and
that the lead is all
got out. I am afraid
there must be some

OSI

THE UNIVERSITY,
GLASGOW.

whom they had appointed
to maintain British
interests, and notice
at all of his appoint
ment, and any notice
of the time of the first
meeting, except by a tele
gram which I received
on the Sunday afternoon
repeated by my sec'y from
Glasgow, and ten
London members
only on Monday
morning. Four days

after my arrival in Paris, I received an official notice of my appointment and of the time of the first meeting and a list of my British colleagues some of whom had come. I was there because I heard from Germans at the Southampton meeting of the R. A. that the Congress would meet on the 16th of October and I wrote to the French Ministre des Postes et Telegraphes to ask him if it was so and he answered it was. You would be much pleased with today's

announcement
as to the financial
results of the recent
military operations
in Egypt. We shall
have a good many
other matters
to discuss when
you come.
Yours affec?
William Thomson

permanent lameness
after so much damage
but I hope it may be
otherwise. We expect
Lady on the and shall
then hear the last
accounts but if you
will write in the
meantime I shall
be very glad to hear
all your news.
When are you
going to give us
your visit. I sup-

here you will all
be doing) walloon
soon after Christmas
and you must be
here on your part
of the post
I was knowing my
when your letter came
and have been
Were them on the point
of setting out for Pain
where I found myself
sole representative of
Englans in a Europ
Concert of no ordinary
importance, our admirable
manages Government having on
to give each one of the six delegates

USI

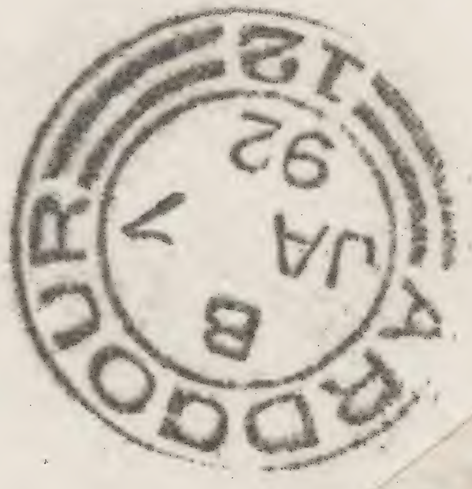
Professor

Hugh Blackburn

Roshven

Moidart

DSI



VIA KELVIN

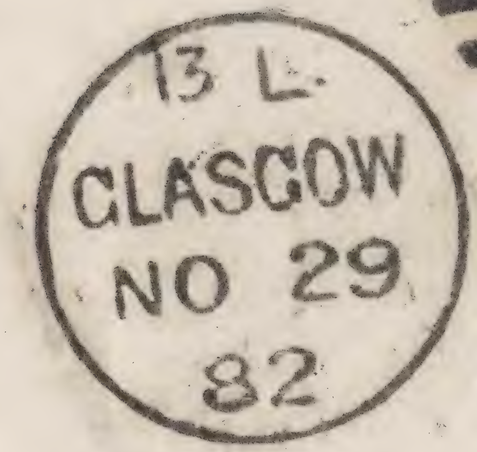
Prof Blackburn

Roshven

Lochailort

by Fortwilliam

DSI



H. Blackburn Esq

Roshven

Ardgour

150

THE UNIVERSITY,

GLASGOW.

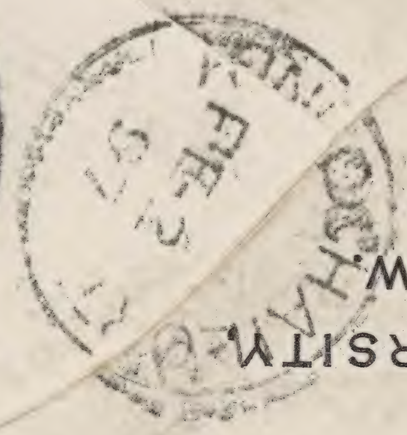
Prof Blackburn

Roshven

Kinlochaylort

Fortwillian

ISO



THE UNIVERSITY
GLASGOW.

R. Dudley Esq

31 Lansdowne Road

Notting hill

London W

ISD

POST CARD.

THIS SPACE MAY BE USED FOR PRINTED OR WRITTEN MATTER.

ONLY THE ADDRESS TO BE WRITTEN HERE.

Prof Blackburn
Roshven
Loch Aylort
RSO

I am so strongly impressed by reason founded on experience in favour of the metrical system that I even approve of the metrical version of the Psalms. I am an out and out metricist.

Nethersall Jan 29 K

DSI

in practice of obtaining heat usefully from a shaft in the earth, three miles deep.

Yours truly

Kelvin

The Editor
The Strand Magazine.

3/151

28th Oct. 1904

NETHERHALL.
LARGS.
AYRSHIRE.

Dear Sir,

In answer to your letter of the 17th Oct., M. Bartholot I believe, knows as much as anyone of the possibilities of producing artificially compounded foods from the chemical elements.

There is no possibility

Kelvin

Rm/s
£5.10.0

15, EATON PLACE,
S.W.

May 12th 1900.

The Right Hon:
Lord Stair.
Chancellor of the University of Glasgow.

My Lord,

In answer to your letter of the 10th on the part of the University Court, I have much pleasure in accepting the invitation with which it has honored me, to speak on the subject of James Watt, on the

occasion of the Celebrations
in the Summer of 1901.

I remain.

Yours very truly.

Kelvin

DSI

DSI

Dec 22/94

THE UNIVERSITY,
GLASGOW.

Dear Mr Holmes

I wish I could have seen you again yesterday evening, after the concert, to have told you how much we all enjoyed the music. I would like too to have had an opportunity

(without making a speech!) to thank Mr. Hoeck and all his orchestra, for the great pleasure which they gave us, and to congratulate you all on the success of the First Concert of the "Semi-Jubilee" Year.

Wishing you all a happy Christmas and good new year

I remain
Yours very truly
Kelvin

DSI

DSI

Lithographed

THE UNIVERSITY,
GLASGOW.

June 23, 1896

The Hon
Wm Justice Jardine

Lord Kelvin is much gratified by welcome letters containing congratulations on the occasion of the Jubilee of his Professorship, and highly valued good wishes, and kind words, which have come to him from many friends. He is very sorry that it is impossible for him to write in reply to each. He desires now to express his heartfelt thanks to all for the great kindness and sympathy which he has received

Kelvin

July 22/84

Dear Prof Flower

I was really obliged by you for looking at the shells, and much interested in your finding that they were sea shells. I picked them up on a bank a little below Runcorn on the Upper estuary of the Mersey, and thought

they looked like sea
shells, but could not
decide how much
knowledge. They
must have been
washed up from
Liverpool Bay by the
inward rush of tide,
which carries a
great deal of sea
sand in with it

twice every day.

Believe me

Yours very truly

William Thomson

Sir William Thomson
after Lord Kelvin

Saturday

Dear Lord Sackville

We go to Chatham

on Tuesday morning

and if you are still

of the mind to come

and see the "Splatter"

I shall be glad to

have the pleasure

of your company,

and we would go

up direct from

Chatham to the Limits

Mail which leaves
8.40 pm Glasgow.
I don't know the
times of trains to
& from Chatham
at present, but
it is most probable
I shall be at Beckenham
on the Tuesday night and
I shall write to you

DSI

& say what train
I am going by from
Beckenham to Chatham
so that we may
meet there - if
I do not see you
before.

Yours truly
William Thomson

DSI

VOL. III.

NETHERHALL.
LARGS.
AYRSHIRE.

F. Corns
C.S. "Electra"

In remembrance of
happy time onboard
the Electra in August
and September 1894

Kelvin

Jan 29/92

THE UNIVERSITY,
GLASGOW.

Dear Sir Henry

It is very late now to thank you for your very kind congratulations. I do so nothing the less heartily for the unwilling delay. I thank you too for the kind expression

377

You give me of
satisfaction as to
the recognition of
science, in the
honour which
the Queen has con-
ferred on me.
Believe me
Yours very truly
William Thomson

DSI

Jan 9/92

THE UNIVERSITY,
GLASGOW.

Dear Mr. Dudley

Your letter was very welcome, with its reminder of our old Great Eastern days which I care never to forget, and your kind congratulations on the new-year's gift which the Queen has

Kelvin
I 4

375

given me. With
hearty thanks, and
best wishes for
the New Year, I remain
Yours very sincerely
William Thomson

Hon. Lord Kelvin of Largs.

DSI

Oct 15, 1900

NETHERHALL.
LARGS.
AYRSHIRE.

Dear Madam

I have much pleasure in complying with your request.

Yours faithfully

Kelvin

NETHERHALL.
LARGS.
AYRSHIRE.

January 16th 1901.

Dear Mr. Wickstead,

I thank you for your letter of the 14th. We shall come on Thursday Jany. 31 either by the train from Kings Cross arriving Leeds 5-22, or the St. Pancras train arriving Leeds 5-0. I do not know if there is any reason for preferring one to the other. If there is, will you kindly let me know.

I have written to Principal Bodington saying that I had asked you to arrange times for coming to see different departments of Yorkshire College etc., on the Friday. We put ourselves in your hands to arrange anything for the Friday and the Saturday forenoon. I think we shall have to leave by 1-47 on Saturday for Todcaster

where we are going to
stay over the Sunday with
some old friends.

I hope we shall
be able to see the
Well House Foundry,
either on the Friday or
before we leave on
the Saturday.

Yours very truly,

Kelvin

DSI

28 Chester Square
London
S.W.

30
Se

June 24/97

Dear Mr. Pitt Lewis

I have put down
Arthur Hart as
candidate, pro-
posed by me. Will
you please
second me. I am
writing to him

ask leave of Mrs
fill the blank
Mr's usual residence
Yours truly
Kelvin

London Aug 16, 1858

My dear Sir

I wrote to Mr Whitehouse on Saturday and enclosed a paper of directions for you and Anderson, which I presume you have got before this reaches you. If not, ask Mr Whitehouse, and he will at the same time point out where the battery is to be put. There will be a great crowd these days now that our troops and the others have come from Plymouth, and some additional accommodation will be necessary. Look to this, & try & get a safe place, under cover, in the

know how to connect them (by flat copper plates pressed in between copper trays & the zinc below it, when you have not a ~~solder~~ screw soldered to the copper tray) these wires to be all numbered distinctly, & the ends in the instrument room to be brought to the gutta percha slip bearing studs. Mr Morrison prepared for the Agamemnon, & you had better fix up on the end wall of the instrument room in our quarter.

I hope to arrive in good time on Friday & at once commence with my battery working to new foundland.

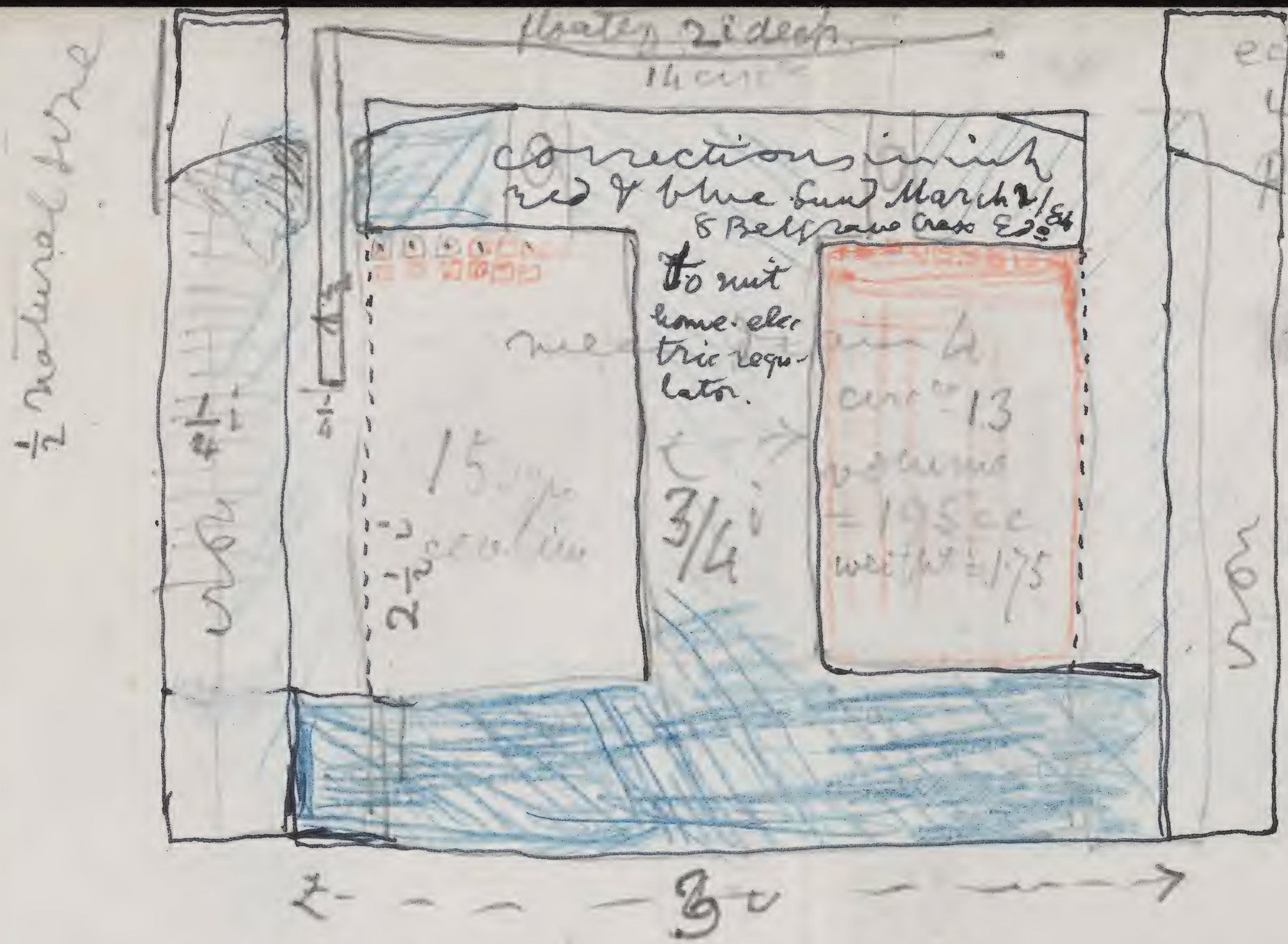
Yours truly W Thomson

DSI

slate works where some of them can be put in as convenient a position as possible. I am anxious that the box from White & Barr, containing the new keyboard, should be in a safe place, & convenient for unpacking. Have it ready to open but do not open it, till I come. The boxes from Plymouth (Worth's & Croydon's) you may carefully open yourself. The crates containing the battery cells need not be opened at present, as they will not be wanted probably.

I particularly wish 200 of the tray cells, in perfect condition, to be ready for me when I arrive on Friday, & I hope you will manage to secure this. The nearer to the instrument room the better.

Have 12 different stout thick covered gutta percha wires, ready to lead from different points of the battery, to the instrument room. You



economy fcn
with battery
$C^2 = \frac{A}{1640L} \cdot 10^{16}$
with tools

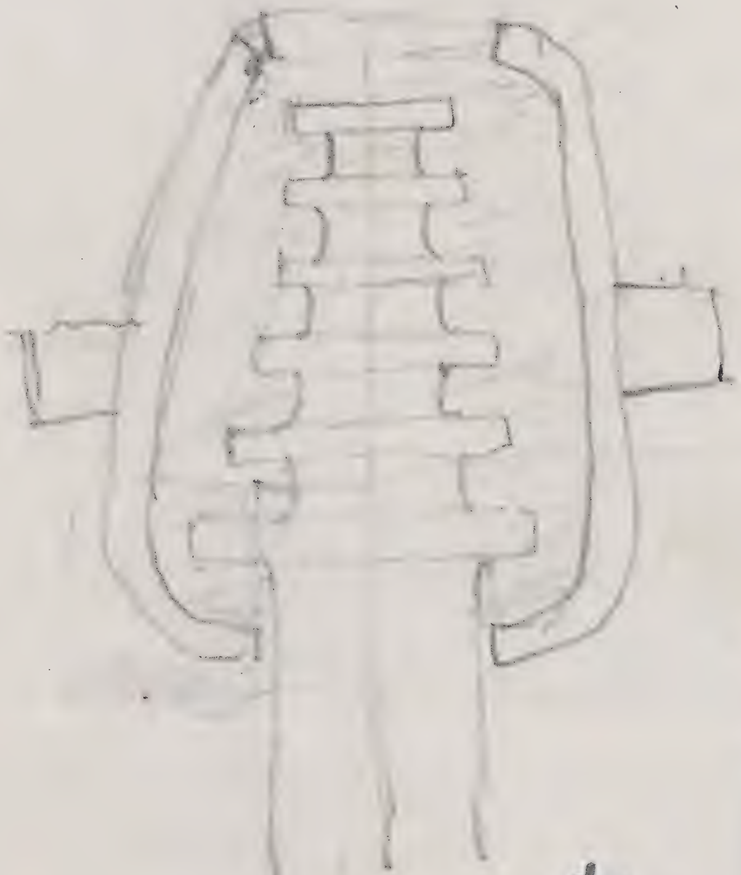
to produce
200 amps per sq
= 20 cgs
A = 1, L = 1
$2\theta = \frac{x \cdot 10^8}{1640}$
$x = \frac{328}{10^7}$
& for V
$x = \frac{328V}{10^7}$
$= \frac{328 \cdot 195}{10^7}$
$= \frac{48}{10^4}$

at 50 amps per sq cm

45 cgs
12
900

at 200 amps per sq cm
3600 cgs

DSI



$$-\frac{dp}{dx}+X=\left(\frac{du}{dt}+u\frac{du}{dx}+v\frac{du}{dy}+w\frac{du}{dz}\right)\rho$$

$$X=\rho\frac{d\Phi}{dx}$$

$$u\frac{du}{dx}+v\frac{du}{dy}+w\frac{du}{dz}$$

$$u\frac{dw}{dx}+v\frac{dw}{dy}+w\frac{dw}{dz}$$

$$-\frac{1}{\rho}\frac{dp}{dx}+\frac{d\Phi}{dx}=\frac{du}{dt}+$$

$$\frac{d\Psi}{dx}=$$

$$\frac{d}{dt}\left(\frac{dw}{dz}-\frac{du}{dx}\right)+u\frac{d}{dx}\left(\frac{dw}{dz}-\frac{du}{dx}\right)+v\frac{d}{dy}(\quad)+w(\quad)$$

$$+\frac{dw}{dx}\frac{du}{dz}-\frac{dw}{dx}\frac{du}{dx}$$

$$+\frac{dw}{dy}\frac{dw}{dz}-\frac{dw}{dz}\frac{dw}{dy}$$

$$+\frac{dw}{dz}\frac{dw}{dz}-\frac{dw}{dz}\frac{dw}{dz}$$

$$\left.\begin{array}{l}\frac{dw}{dy}\frac{dw}{dz}=\\ -\frac{dw}{dz}\frac{du}{dx}\\ +\frac{du}{dy}\frac{du}{dx}\end{array}\right\}$$

$$\frac{du}{dx}\left(\frac{dw}{dy}-\frac{dw}{dz}\right)-\frac{du}{dy}\frac{dw}{dx}+\frac{du}{dz}$$

$$\frac{du}{dx}$$

$$-\frac{dw}{dx}$$

$$-\left(\frac{du}{dx}+\frac{dw}{dz}\right)\frac{dw}{dz}+\left(\frac{du}{dx}+\frac{dw}{dz}\right)\frac{dw}{dy}$$

$$-\left(\frac{du}{dx}+\frac{dw}{dy}\right)\frac{dw}{dz}+\left(\frac{du}{dx}+\frac{dw}{dy}\right)\frac{dw}{dy}$$

R.S. tomorrow
evs. You take
"Nature" I believe, and
in it you will see some
thing of what two young
Drs (community
called "the doctors"
in ~~the~~ our laboratory) are
doing with me. I have
also a fight with "fin
du siècle" chemists over
some absurd hypo-
theses about "solutions"
which have bulked
largely in books and
work at Cambridge,
Oxford, even Ed^o, and
Germany generally for
just about 10 years, but which
I think will not live till next century
will you not come with your

wife to the Civilized World in March. Mine has just received your
letter re an-
cient photos
Yours affy
Kelvin

Kelvin (?)
10/10/

Jan 31/97

CULZEAN CASTLE
MAYBOLE
N.B.

P.S. I seem to re-
member a "Haworth" [? a
Trinity friend
of yours more par-
ticularly ?]

Dear Hugh
I should have
sent you the en-
closed photos sooner,
but that I have
been having some
correspondence
about them with
Mr. Lomax (Oil Mills
Hull) and Lockyer,
with a view to their
possibly appearing in

"Nature". Mr L. has taken some day-light photos of the scenes to show the trees, lamps, &c and has sent them to me, and I have sent them to Lockyer. It is very difficult to understand how L.'s two photos should both show those extraordinary curves of which we have never seen or heard anything before. Perhaps some of Lockyer's expert correspondents may be able to explain.

The big flash of light in the lower right corner of one of them is a damage of the negative by some sunlight getting in accidentally.

We are here just now Friday to Monday, and so to Edo for

DSI

28, CHESTER SQUARE,

S.W.

May 24. 1897.

Dear Mr. Wicksteed,

I have much pleasure in joining in the memorial and I enclose the printed slip signed accordingly.

Yours truly

Kelvin

Wm T. Kelvin
Eng Mathematician
93X001

Cat 110
35 -
3 items

NETHERHALL,
LARGS,
AYRSHIRE.

17th Sept., 1906.

Dear Mr Parsons

In answer to your letter of Sept. 5, received today, I have much pleasure in sending you a signed photograph.

Yours truly

Kelvin

Sept 19/82

NETHERHALL.
LARGS.
AYRSHIRE.

Dear Hugh

I have felt ~~ii~~ I owe
debt ever to buy, though
I did immediately order
the oars which I hope
reached you in good time.
I suppose there is
not much difference
of opinion now-a-days about
the war, and all are
very glad it is so well
over. We were very
sorry to see that you

nephew has been severely wounded. I hope you have some reassuring intelligence. I see in the paper today that there is good hope of his recovery. I hope the wound is not such as to leave him damaged when he recovers. We would be glad to hear from you if you have any information.

The Berrys (Mr., Mrs., Mr. W) are here and send kind regards.

The new depth gauge has

DSI

NETHERHALL.
LARGS.
AYRSHIRE.

Gladstone now free to turn his attention to the Scottish Universities in winter.

How thoroughly we all now see that Gladstone was right about the Porte 6 years ago. The difference between him

the others is (the
characteristic
difference between
whig & tory) that
he saw it about
5 years sooner.
Lady Thomson
sends her
kindest yards
to you all

and I remain
Yours affec^y
W Thomson

DSI

advances and changed in species, largely, and promises very well.

We remain here till the 5th of October and then start for Newcastle (to see Swans light (lamp) factory), London (to see a part of my last patent in action, having been independently but subsequently invented, and realized, by one Ferranti) Paris (for international

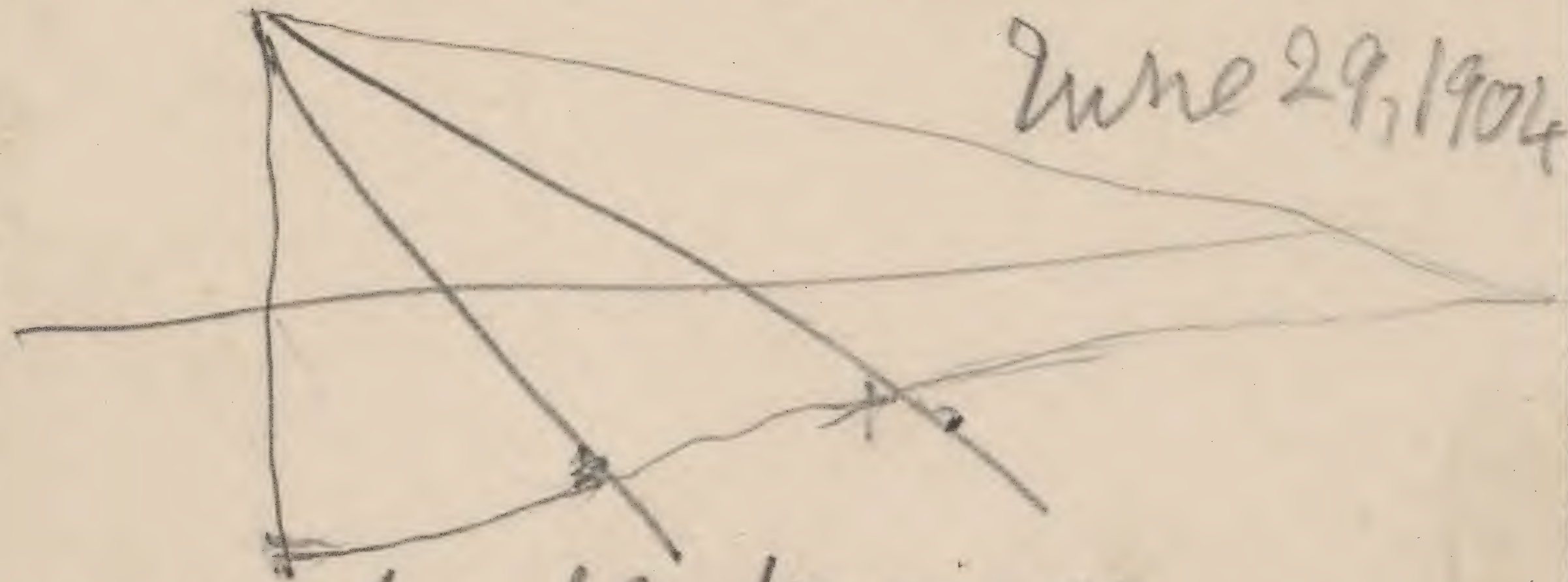
DSI

compass in electric
units) and Peterson
(for annual college
meeting Oct 29) I am
afraid there is no
chance of my being
down there on the
4th to return with
here before we leave,
but you must see
us a visit in the Uni-
versity (it becomes more
and more important
to keep College, and make
the University one if possi-
ble, in the face of this Egyp-
tian success, and the prospect
of Procedure in October, leaving

DSI

Conchoid

June 29, 1904



very badly drawn

Kelvin

93X006

Lord Kelvin

Cat 110
75
(3 Ann)

DSI

THE UNIVERSITY,
GLASGOW.

23rd May 1888

Dear Prof. Garhart

I have received
your letter of 3rd inst. respecting the
use of my graded potential galvano-
meter No. 191. In reply you may use
it for potentials as high as 1000 volts,
provided you do not allow the current
to remain on for more than the time
necessary to take a reading - not
more than 1/2 a minute. I have
roughly estimated the probable heating
of the coil at this potential, and

THE UNIVERSITY,
GLASGOW.

taking into account the specific heat of the silk coating of the wire and the paraffin insulation, I find it will be about 1° Cent. per second. The instrument has been designed to act continuously in circuit between points having a difference of pot. entiab of anything up to 250 volts; but it might I believe be so used with safety for differences of potentiab up to 400 or even 500 volts. For experimental purposes you need have no fear in using the instrument to measure these high potentials, as you can observe any approach to injurious heating which would be indicated by the melting paraffin oozing through the silk binding of the coil.

THE UNIVERSITY,
GLASGOW.

In making measurements with the unit heated to any sensible degree you will of course take account of the change of resistance and consequent change of constant. For potentials of more than 400 or 500 volts my electrostatic voltmeters must be available and with it differences of potentials of as much as 10,000 volts may be measured, with the advantage that the instrument may be kept continuously in the circuit with absolute safety.

Yours very truly
William Thomson

P.S. I enclose per Book Post a pamphlet describing my new standard instruments, on p. 14 of which you will find the Electrostatic voltmeters.

THE UNIVERSITY,
GLASGOW.

August 1. 1893.

Dear Professor Carhart:

The more I think of it the more I feel convinced that in the Ampere, the Ohm, the Volt, and the Watt we have enough of names for units on the so called "practical" system. If we extend this system to the unit of magnetic force we could not use it practically without also taking ten million metres as the "practical" unit of length. How practical this would be you may imagine by considering how you would like to specify the dimensions of a dynamo or of a steam engine in decimals of a meridianal quadrant

of the earth!

As to the unit of self-inductance in electro-magnetic measure it seems to me very undesirable to give it a name to itself because it is itself simply a length. Surely it is easier and more instructive to tell that the self inductance of a certain circuit is five ~~thousand~~ hundred kilometres than to say that it is a twentieth of a secohm.

If any hitherto unnamed unit is to be named, let it be the C.G.S. unit of magnetic force, and for this obviously the name of Gauss would be admirably appropriate. This would have the collateral advantage of calling attention of practical

DSI

electricians to the C.G.S. system; practical acquaintance with which, and well judged use of it in connection with the present practical system would be found of great practical value. Still, I think on the whole it would be better not to name the absolute unit of magnetic force, but simply to refer to it as "C.G.S." measurement. This would keep the principles of Gauss' complete absolute system more perfectly before the mind even than the use of his great name in connection with it.

Hoping you will have a

very good and happy time of it- in Chicago, and all possible success in your Electrical Congress, and regretting very much that I cannot be with you in it; I remain,

Yours very truly,
Kelvin

P.S. Mr. Merkle has shown me the copy of your article on a one-Volt Standard cell, and we are much interested in it. I hope to be able to try it in Nov- or Dec.

091

Netherhall,
Largs, Ayrshire.
19th.Oct.1905.

Dear Professor Carhart

I am much interested in what you tell me in your letter of Sep. 15th. regarding the conference which is to be held this month at the Reichsanstalt as a preliminary to the meeting of the International Commission on electric units and standards.

I am glad to know, as I believe is the case, that all the nations to be represented are loyal to the recognition of Gauss and Weber's absolute system as our present foundation for all scientific and practical electric measurements; and agreed to the C.G.S. detail.

The subordinate details for legal conditions regarding electric measurements for the supply of electric power (light included) and for electric pressure, especially in respect to safety of users and of the general public, are clearly of supreme practical importance. I quite agree with your view that the time has come for making the volt and the ohm the two legally primary units, instead of the ampere and the ohm as at present. When the present system was legalised in England, the electrolytic verification of the ampere within one-tenth per cent was surer and more easily practised by the silver voltameter, or by the copper voltameter with Thomas Gray's working conditions, than was a correspondingly accurate ver-

-ification of the volt by a standard cell. But the progress of experimental research on standard cells has, in my opinion, wholly turned the tables in this respect. The direct verification of the volt by means of a standard cell is at present, I believe, considerably more accurate in common practice than the best present electrolytic verification of the ampere : and is certainly much easier.

Wishing you a very pleasant time in Berlin, and begging that you will give my kind regards to all my scientific friends in the conference,

I remain,

Yours truly

Kelvin

Netherhall,

L R R G S , Ayrshire.

21st.Oct.1905.

Dear Professor Carhart

I wish to add to my letter of Oct.19th, that my preference of verification of volt by standard cell to ampere by electrolysis, is merely in respect to a subordinate method which should be admitted as a legal test. I never for a moment intended to make it take the place of the absolute electrodynamic determination by Rayleigh's absolute electrodynamic balance ; on which the practical ampere is founded : and from which and the ohm the practical volt is fundamentally determined.

In case of any question will you make this clear from me to the Conference ; and explain that by legally I meant,not scientific law, butpractical law as to what is admissible and convenient in respect to supply and demand. To make this quite clear, please delete the word "the" before the word "two" in line 6 from the foot of the first page of my letter, and delete the last word of this line and the first nine words of the following line.

Yours truly

Kelvin

The University,
Glasgow.

17th Feby. 87

Dear Mr Page Hopps

I have your letter of yesterday and was much interested in hearing that your Leicester Society was so successful. I am very sorry that I cannot meet more favourably your request for a Lecture, which I find it is quite impracticable I could undertake on account of the incessant and absorbing nature of other work.

Will you kindly express to your Society my thanks and regret that I have been compelled to decline their invitation. With best wishes for your success I am truly

Yours truly William Thomson

Lord Kelvin 7/6

Feb 18/95

THE UNIVERSITY,
GLASGOW.

Dear Sir

I received your letter of Jan 31, and have pleasure in complying with your request.

Yours truly

Kelvin.

I am glad to hear from you that you have been interested in reading some of my papers

LORD KELVIN'S JUBILEE.

[FROM OUR OWN CORRESPONDENT.]

GLASGOW, MONDAY NIGHT.

The celebrations in connection with the jubilee of Lord Kelvin's occupancy of the chair of Natural Philosophy in Glasgow commenced to-day, and will extend to Wednesday. Professorial jubilees have, of course, been celebrated before in Glasgow, but the present century has witnessed no such jubilee as that of Lord Kelvin. He stands on the pinnacle of scientific renown

Brooksby, Largs,
by Greenock,
Aug 29/65

My dear Sir

I hope you will not forget the promise you kindly made that you would send me a photograph. I enclose a reminder.

When I left London last week things looked well for a new cable, and our one needed it, as seemed likely if the case, all possible

Kelvin 3757

381

between the two companies,
the wheels may be
turning at Wharf Road
this week.

Your illustrations
in the "Atlantic Weekly" have
been much admired here.

Believe me
Yours very truly
William Thomson

R. C. Dudley Esq

DSI

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-gav[illegible]ttled, thundery weather may be expected

Our correspondents forward the following latest graphic reports:

ation.—Bar. 29·92, steady; wind S.E., light; weather fine d clear all day.

E[illegible]V.L.—Bar. 29·95, falling; wind N.N.E., light; weather increase heat during the day, thunderstorm in the evening.

Dover.—Bar. 29·80, falling; therm., max. 74°, min. 66°; wind N.N.E., light; weather very fine; sea smooth; steamers made good passages.

Eastbourne.—Bar. 29·90; therm., max. 72°, min. 62°; weather, beautiful summer day, with light sea breeze.

Edinburgh.—Bar. 29.827, falling; therm. max, 61·7°, min. 55°; weather fine.

Kirkwall.—Bar. 29.88; therm. 52°; weather foggy.

Paris.—Bar. 29·68; therm. in afternoon 77° Fahr.; weather dull morning, but fine and sunny afterwards.

The Meteorological Office reports bright sunshine at Westminster, 11·2h; Eastbourne, 8·2h; and Negretti and Zambra, 10¼h.

LATEST INDICATIONS.

"DAILY TELEGRAPH" OFFICE, TUESDAY (2 A.M.)

BAR.	THERM.	WIND.	WEATHER.
29·82	74°	Variable. Gentle.	Cloudy.
Falling.			

PROSPECTS FOR TO-DAY

DISTRICTS.		FORECASTS.
0. Scotland,	N.	S. winds, light; fair at first, doubtful later, possibly thunder-showers.
1. Do.	E.	
2. England,	N.E.	E. and S.E. winds, light; fair at first, unsettled later, probably thunderstorms.
3. Do.	E.	
4. Midland Counties.		S.E. and variable breezes; close, unsettled, thunderstorms in places.
5. England, (with London and Channel.)	S.	
6. Scotland,	W.	Light variable airs; fair at first, unsettled later, probably thunderstorms.
7. England, (and N. Wales.)	N.W.	
8. England, (and S. Wales.)	S.W.	Light variable airs; close, unsettled, thunderstorms in places.
9. Ireland, N.		S. and S.W. winds, light; unsettled, some showers, possibly thunder.
10. Do. S.		

The above chart represents the movement of the barometer, corrected for sea level and reduced to 32° F., during the last four days ending midnight, June 15-16.

The Meteorological Office last night (8.30) issued the subjoined forecasts:

ROBERT H. SCOTT, Secretary.

between the two companies,
the wheels may be
turning at Wharf Road
this week –

Your illustrations
in the "Atlantic Weekly" have
been much admired here.

Believe me
Yours very truly
William Thomson

R. C. Dudley Esq

DSI

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This evening the jubilee celebrations commenced with a conversazione given by the University authorities and the Corporation of Glasgow. The University is a picturesque building, situated in the West-end of the city, on the eminence known as Gilmore-hill, and to-night the cloisters, quadrangle, and dim examination halls were all ablaze with the electric light, a special installation having been fitted up for the occasion. And, to add further to the adornment of the academic building, stately palms and delicate flowering plants were ranged in profusion along corridors and staircases, while the music of various bands resounded through the halls as the guests were received in the beautifully carved Randolph apartment. Lord Kelvin, accompanied by Lady Kelvin and the chief University professors, received the guests, who numbered some 2,000, in this salon, and thereafter they passed into the handsome Bute Hall, where, by half-past nine, there was assembled a company of representatives of Universities, learned societies, and educational institutions from every part of the world. Such a gathering of savants, it is safe to say, had never been seen under one roof before. In detail, it is impossible to refer to each of the 150 distinguished visitors who had come from far and near to do honour to Lord Kelvin. Sir George Stokes was present on behalf of the University of Cambridge, Sir Henry Roscoe represented the London University, the Provost of Oriel College (Mr. D. B. Monro) came from the Oxford University, while the Earl of Rosse was the representative of the Dublin University. Other delegates were Professor A. W. Rücker, of the British Association; Sir Frederick Abel, Society of Arts; Sir Benjamin Baker, Institution of Civil Engineers; Professor Sir Joseph Lister, Royal Society; Lord McLaren, Edinburgh Royal Society; Professor Purser, Queen's College, Belfast; Professor P. G. Tait, Edinburgh University; Professor Max Müller, Oxford; Principal Jones, University of Wales; Professor Ramsay, London University. From the United States there were Professor Joseph Ames, John Hopkins University, Baltimore; Professor Cushney, Michigan; Professor Van Amringe, New York; and Lord Rayleigh was the delegate from the American Academy of Arts and Sciences, Boston. From Canada there came Sir D. A. Smith, of McGill University, Montreal; from India, Professor J. H. Gilliland, of Calcutta; and from New South Wales, Professor Liversidge. Austria-Hungary, Belgium, Denmark, France, Germany, Holland, Italy, Mexico, Russia, Sweden, Switzerland, all paid their compliments to the great physicist to-night. Professor Henry Moissan and Professor Lippmann are the delegates from the University of France, Professor Heinrich Du Bois Raymond came from the University of Berlin, Professor Frohlich from Buda-Pest, Professor Christiansen from Copenhagen, and Professor Nicholas Oumov from the University of Moscow.

When the reception concluded Lord Kelvin proceeded to the Ewing Hall, where an exhibition of the distinguished professor's inventions were on view. Here, also, the Anglo-American, Eastern, and Commercial Cable Companies had telegraphic instruments in working order, and connected with every part of the world. During the course of the evening, congratulatory messages were received through them from various universities in America, the British Colonies, and the Continent, and Lord Kelvin was able to telegraph his thanks in return straight from the hall. The exhibition also included specimens of Lord Kelvin's mariner's compass and several of his electric light instruments; and his diplomas and medals from every civilised nation likewise formed an interesting collection. The function, a brilliant one, was followed by a students' "Gaudeamus" and welcome in the Students' Union, which Lord Kelvin attended, along with a number of distinguished visitors. To-morrow (Tuesday) Lord Kelvin will receive addresses from learned bodies at home and abroad, and will afterwards be made an LL.D. of Glasgow University. In the evening he will be entertained at a banquet by the Corporation of Glasgow.

An interesting feat in telegraphy was accomplished in connection with to-day's celebrations. The Jubilee Committee sent a cable from the University, congratulating Lord Kelvin. The message went round the world and came back to the University in seven minutes. Lord Kelvin cabled his reply over the same route, and in four minutes this completed the circle.

and Co., who have now become the lessees instead of the annual tenants, have had to guarantee an additional rent of £500 per annum, and the course is now turfed from end to end. The run-in has been made absolutely straight, while not only have the bends above referred to been abolished, but the course has been enlarged at its circuit and two rather objectionable corners have been done away with. In short, to quote Mr. Bevill, the inspector of courses, the five furlongs and the mile have both been greatly improved. But this does not exhaust the catalogue of alterations. With regard to the course itself a system of watering by automatic sprinklers has been introduced with great success, and the result is that, despite the dryness of the season, the turf is in excellent condition. As at Gatwick and other places, [illegible] steps have been taken, by the erection of gang-

of next month, to let me
know what number of
foreign invitations have
been accepted, and whether
there is any plan of billeting
to be followed for eminent
men of our own who
have not been provided
for by private friends.
I am on the point of setting
out for Germany with
Mrs Thomson in pursuit of health
but ~~a letter~~ my address
will always be to be led
at Cochrane St., or a letter
simply sent there & marked
to be forwarded, would reach me.
Believe me, Yours very truly
William Thomson

Ans.

London
June 23, 1855

My dear Sir
I have received the
enclosed and I shall be
much obliged by your
sending some copies of
the circular according
to the request.
I cannot find Maggie's
address, but it is not of
much consequence as there
was a doubt in that
case whether the invitation

ought to be sent or not.
The other letters which
Mr Crum brought will
all be duly forwarded.

I do not know whether
M. Hermite has accepted
or not, but I think
there is some prospect
of his being induced to
come, along with three
English mathematicians
Cayley, Sylvester, and
Ferrers, all very eminent
three of them being in fact
the leading men in their
branch of science in Europe.
I should be very glad if
we could get them
pleasantly lodged, and if
we have vacant billets
from foreigners refusing,
I think it would be a
very good way of filling them
to offer them to counter
men of our own who
stand so high. I should
be much obliged by a
line, sometime in the course

Thomson - (William Lord Kelvin)

2 College, Glasgow
March 1, 1851

My dear Walton

Many thanks for the copy of your book of Problems in Plane Coordinate Geometry which you have been so kind as to send me & which I received yesterday

I think it will have the effect of giving a much more classical character to Cambridge undergraduates' geometry than it had in my day, whatever it may have had since

Yours very truly

William Thomson

OSI

William Thomson
(Lord Kelvin)
1824–1907
Physicist

to the Librarian
Ludwig Aigner
Budapest

Yacht "Lalla Rookh"
Milford Haven
Sep 18, 1874

Sir,
I regret that in consequence of absence from home I have not been able sooner to answer your letter of the 1st of July. I now send you a photograph according to your request, and take the opportunity of saying that I shall be glad to receive the lithographed

DSI

leaves of portraits and
signatures of the members of the
Hungarian Academy
of Budapeste which
you propose to publish
at a price not exceeding
22 s. My permanent
adress is
Sir William Thomson
University
Glasgow

Believe me
Yours truly
William Thomson

DSI

The University,
Glasgow.

5th July, 1883.

Messrs Rud. Grimburg and Carl Pfaff,
Managing Committee
The International Electrical Exhibition
of Vienna. 1883.

Dear Sirs

In answer to your letter of 26th June, I am unhappily unable to give a lecture in any other than the English language. If, subject to this untoward condition, a popular lecture on "Gyrostatic Illustrations of Magnetism" could be accepted, I should be glad to do my best to make the subject

The University,
Glasgow.

intelligable, and to shew some mechanical illustrations by apparatus which I would have sent from Glasgow for the purpose.

The most convenient dates for me would be 24th October, or any day from 22nd to 27th October.

I remain

Yours faithfully

William Thomson

1883

Glasgow 5. Juli

William Thomson

Glasgow.

Fr. L. Juli

Ln Dr. Wien.

DSI

Kelvin (William Thomson, 1st Lord) 1824-1907

President Royal So. 1890-94. First Member of the Order of Merit

Peterhouse Lodge,
Cambridge.

Tuesday -
June 8?

3.VI 1889

Dear MacAlister,

I highly admire
the Discussion on
the Voltaic Cell being
opened by Prof. Lodge
at Montreal in the
way you suggest
& very true,
William Thomson

SCIENCE. KELVIN (Sir William Thomson, Lord). 1824-1907. 2 pp., 8vo, Signed William Thomson, *Greenock, Aug.* 29, 1865, to R. C. Dudley, artist, regarding the Atlantic Cable, " When I left London last week things looked well for a new cable & our own mended. If as seemed likely to be the case, all goes well between the two companies the wheels may be turning at Wharf Road this week. Your illustrations in the ' Atlantic Weekly ' have been much admired here " Myers 55 £5 5s

(The cable was finally successfully laid, after years of endeavour, in 1866).

389 **SCOTT** (Sir Walter). PROMISSORY NOTE from James Ballantyne & C *Edinburgh*, 26 *May*, 1818, "Four months after date, we promise to pay to W ter Scott, Esq. of Abbotsford, on order, Four Hundred & fifty pounds for va in Literary Property." Signed on verso by Scott, G. Craig, J. Ker, *etc.* £3

390 **SECKER** (Thomas). 1693-1768. Archbishop of Canterbury. Interest A.L., unsigned, 2½ pp., 4to (*last page inset*), *Aug.* 21, 1763, asking t Professor Leese "who began the Library" be advised who have been principal benefactors, "shew him the Catalogue of the Printed Books'

[75] KELVIN, WILLIAM THOMSON (Lord). (1824-1907). Noted British physicist. Made important contributions in the fields of thermodynamics and electricity. Devised the absolute ("Kelvin") scale of temperature, etc.etc. A VERY HANDSOME SIGNED PHOTOGRAPH (small cabinet, 3¼ x 5). Head and shoulders. In beautiful condition. Boldly signed, "KELVIN, Yale, May 5, 1902."

Rare: $12.50

ANS, lp, on a small piece of paper, measuring 3" x 1½", in black ink:-

"Is there anything
in the 'laboring line'
which could be given
this man?
A. LINCOLN
Aug. 2, 1862."

Unusual: $50.00

[82] LINCOLN. Fine ANS, lp, on a card. Measures 3¼" x 2", in black ink. Very attractive looking

99 **THOMSON** William), lord Kelvin, physicien anglais, célèbre par ses recherches sur l'énergie solaire (1824-1907). — L. a. s. à M. Walton. Glasgow, 1cr mars 1851, 2 pp. in-8. 1.800 fr.

Il remercie de l'envoi de son livre de Géométrie qui sera un ouvrage classique à Cambridge.

KELVIN, BARON. Discoverer of many basic principles in physics, particularly in the field of electricity. A.L.S., three pages, Glasgow University, 1894 expressing his great interest in music. [125] $15.00

JOHNSTON, ALBERT SIDNEY. Second of the 8 full generals of the Confederacy to be appointed. Earlier a general of the Texan Army. A.L.S., one page, 1855, mentioning R. E. Lee. Very fine condition [100] $25.00

388 ——— ——— 1½ pp., 8vo, in original envelope, *The University, Glasgow, Jan.* 9, 1892, to the same, referring to "our old Great Eastern days which I can never forget," thanking him for congratulations "on the New Year's gift which the Queen has given me" (he was raised to the peerage) MYERS 53 £4

404 **SCOTT** (Captain Robert F.), 1866-1912. Arctic Explorer. 2 pp., 8vo, *Chelsea, Dec.* 28, to his lecture agent, "Its no good bickering with Mr. Hume, from all accounts he's an ass . . . the sum is less than ½ his guarantee . . . Shackleton has paid in £120 & says there may be more to come . . . Ford comes here tomorrow," etc.

SCIENCE

464 —— KELVIN (William Thomson, Lord). 1824-1907. 2 pp., 8vo, *The University, Glasgow, Jan.* 29, 1892, to Sir Henry, thanking him for congratulations & " for the kind expression you give me of satisfaction as to the recognition of science, in the honour which the Queen has conferred on me," signed " William Thomson," *with fine portrait* MYERS 63 £2 10s

(He was raised to the Peerage in 1892).

OR KELVIN, Lord William Thomson

: A.L.S. TO SIR HENRY THANKING HIM FOR

NGRATULATIONS & "FOR THE KIND EXPRESSION

VE ME OF SATISFACTION AS TO THE...SCIENCE

134. KELVIN, Baron. William Thompson. British mathematician and physicist; *Kelvin Scale*. LS, full page 8vo, January 11, 1906. To Strahan Smith, signed *Kelvin*. Fine condition. Kendell-70 $35.00

"...I find the Engineering Supplement to the Times very full of interesting and instructive matter. It will...be exceedingly useful to the public."

137. LEONCAVALLO, Ruggiero. Italian composer. ALS, full page 4to, Brissago, December 26, 1905. To Monsieur Hengel. Fine condition. $85.00

"Mr. Sardon has informed me through our collaborator Maurice Vasccire (?) that you are probably intending to acquire our *Figaro*. I am eager and *greatly counting* on that work, and would be very happy for you to publish it, since I am aware of your great merit. Because I am obliged to leave for Spain shortly to finish the studies for that work,

KELVIN (Thomson) Lord

A.L.S. dated Sept. 19,1882

KELVIN (Lord)

Short A. L. S. regarding time spent on board the ELECTRA

KELVIN Lord

A. L. S. to Mr. Walton
dated March 1, 1851
Letter of thanks

KELVIN, Lord

A.

KELVIN, Lord
1824-1907

A. L. S. dated Jan. 29, 1892
to Sir Henry

KELVIN (Sir William Thomson, Lord, F.R.S. 1824-1907) L.S. (William Thomson) *The University, Glasgow,* 5th July, 1883 to Managing Committee of the International Electrical Exhibition of Vienna, 1883, pp. 2, 4to, £4 10s/$12.60

E24-57

'. . . I am unhappily unable to give a lecture in any other than the English language. If, subject to this untoward condition, a popular lecture on "Gyrostatic Illustrations of Magnetism" could be accepted, I should be glad to do my best to make the subject intelligable, and to shew some mechanical illustrations by apparatus, which I would have sent from Glasgow for the purpose . . .'

KELVIN, WM. THOMSON. British Mathematician and Physcicist. LS 1p. 8vo. England 1906 in response to a request for his photo; accompanied by a beautiful signed cabinet photo; also a small card in his hand in pencil containing a geometric diagram dated June 29, 1904 and signed, "very badly drawn, Kelvin." The 3 items. $25.00

KRONOVET-60

5. CALVE, EMMA. Opera. Superb cabinet photo signed. .....

6. COOLIDGE, CALVIN. Pres. U. S. LS 1p. 4to. Mass. 1920, signed as Gov. .....

KELVIN AUTOGRAPH NOTE, Netherhall, Largs, Ayrshire, undated, 15*s* Sotheby

'F. Corms C.S. "Electra." In remembrance of happy time on board the Electra in August and September 1894. Kelvin.'

and plates, 8vo. *cl.*, 10*s* 6*d* (p. 18*s* nett) 19

Including contributions by PROF. A. FOWLER, F.R.S., SIR RICHARD GREGORY, F.R.S., SIR NAPIER SHAW, F.R.S., a
others.

—— KELVIN (Wm. Thomson, Lord). 1824-1907. 4 pp., 8vo, in original envelope, *Scotland, Jan.* 31, 1897, to Professor Blackburn, Fort William, "Dear Hugh," discussing some photos, Lockyer, "Nature" & "in it you will see something of what two young Drs. . . . are doing with me. I have also a fight with 'fin du siècle' chemistry over some absurd hypotheses about solutions which have bulked largely in books & work at Cambridge, Oxford & even Ed. & Germany . . . for just about 10 years," *etc.* Subscribed "Yours affectly," with autograph pencil diagrams, figures, annotations, *etc.*, on 4 pp., 8vo, refers to "economy fan with battery," "home electric regulations," *dated* 1884, *etc.* MYERS-59 The 2 items £10 10s

(Kelvin followed closely the first experiments in electric lighting, up to 1900 his various inventions totalled 56, the majority concerned with electricity).

in confidence that a great stride in advance in my process is looming in
distance . . . you are at liberty to mention this fact to Sir John Brow
discusses Webster's patent, his experiments in the employment of Chlo
in the process, giving " a short abstract of Bessemer's Patent " *etc.*

The 2 letters

(The universal adoption of his inventions in the manufacture of s
gave Bessemer a world-wide reputation. Sir John Brown was the Sheff
pioneer of armour plate manufacture. In a few years he had sheat
nearly all the British navy. He was the first to develop successfully
Bessemer process).

326 —— Brewster (Sir David). 1781-1868. Natural Philosopher. 2 p
8vo, *Athenaeum, Monday*, to " My dear Henry," inclosing a ticket for
Panopticon in Leicester Square. " Where I shall be . . . Ask for the Lect
Room . . . we shall . . . go to Musical Publishers " £3

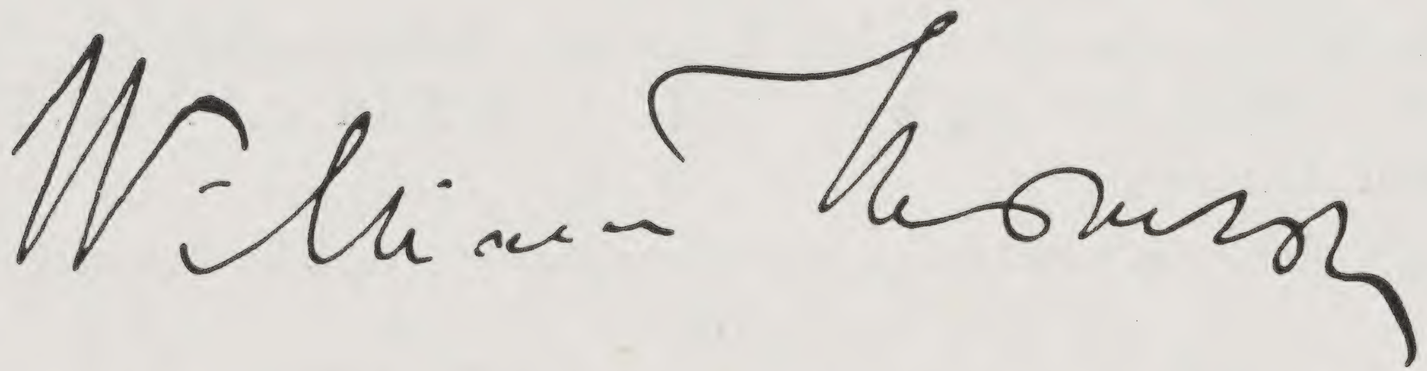
THOMSON, Sir William, Lord Kelvin of Largs, irischer Physiker, einer der Begründer der Thermodynamik, 1824—1907. 3 e.Br.m.U. und 1 e. Postkarte m.U. Glasgow 1882 und 1892 und Netherhall bei Largs 1902 und 1905. 18 S. 8⁰ und die Karte. Mit Umschlägen. (250.—)

An seinen alten Freund Professor Hugh Blackburn. STBRGARDT-63

29.XI.1882: Über einen Kongress in Paris. 6.I.1892: „. . . *In answer to »the Garter« asking what title I would »assume« I said I would like to have »K e l v i n« for association with the University and City of Glasgow in which my home has been for sixty years and in which almost all my work has been done . . .*“

28.XII.1902: „. . . *You are quite right about M a r c o n i. He has largely extended the space of action . . . It certainly is a marvelous achievement to get perceptible results due to electric action 3000 miles away, and to give news simultaneously to every place on land or sea within a »small circle« of that radius on the earth's surface. But we need not take that as the limit or a limit; and it is not now unreasonable to expect that the great circle may be reached, and small circles beyond its as far as the antipodes. Twenty years ago any such expectation would have been considered wild madness . . .*“

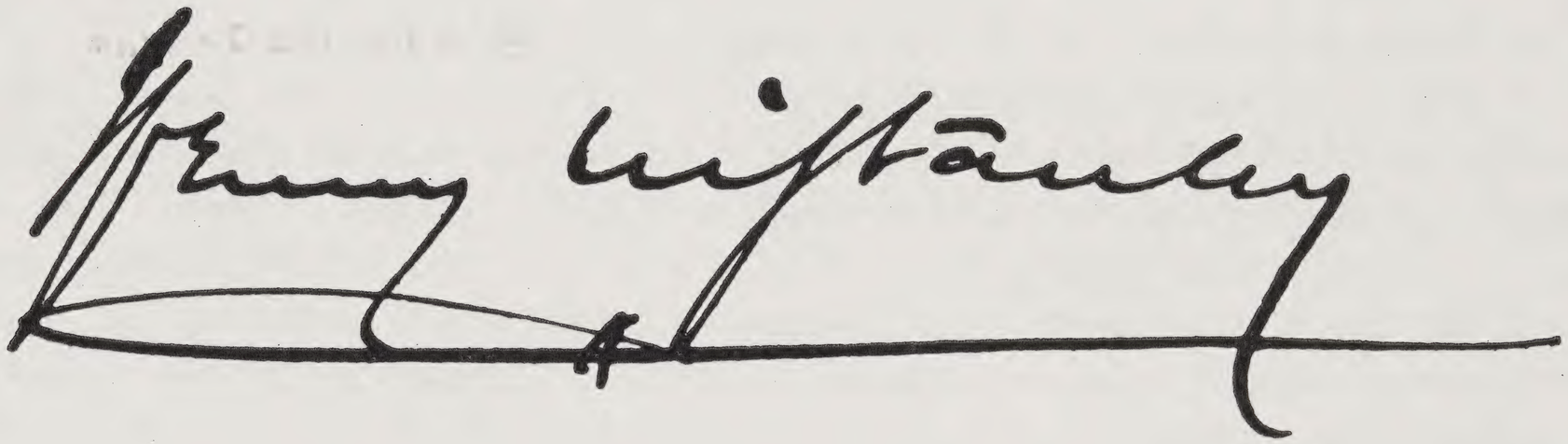
29.I.1905: „*I am so strongly impressed by reason founded on experience in favour of the metrical system that I even approve of the metrical version of the Psalms. I am an out and out metricist . . .*“



#60

Beiliegend ein auf diese Autographen bezüglicher Brief seines Biographen S. Ph. Thompson.

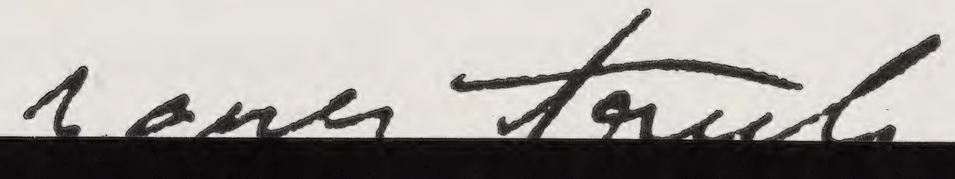
510 STANLEY, Sir Henry Morton, englischer Forschungsreisender, 1841—1904. Br.m.U. (L
don) 26.V.1890. 1½ S. 8⁰. (25



Sendet einem unbekannten Bewunderer („*Dear unknown Friend*“) seine — nicht mehr beiliegend
Photographie. — Beiliegend Brief seiner Gattin.

511 STEPHENSON, George, amerikanischer Ingenieur, Bahnbrecher des Eisenbahnwesens, g
dete die erste Lokomotivfabrik der Welt, 1781—1848. E.Br.m.U. O.O. Dezember 1830. 1 S
Mit Siegelspur und Adresse. (150

An Mrs. Benson. „. . . *Baty was here last night and completed the task he undertook to do*“.



530 THOMSON, Sir William, Lord K e l v i n of Largs, irischer Physiker; einer der Begründer der Thermodynamik, 1824–1907. E.Br.m.U. London 16. VIII. 1858. 4 S. gr.-8⁰, eng beschrieben. (200.—)

Steigardt-68

An einen Mitarbeiter mit ausführlichen Anweisungen zur Vorbereitung von Experimenten auf dem Gebiet der K a b e l - T e l e g r a p h i e.

„. . . *Have 12 different stout thick covered gutta percha wires, ready to lead from different points of the battery, to the instrument room – You know how to connect them (by flat copper plates pressed in betw[een] a copper tray & the zinc below it, when you have not a wire soldered to the copper tray)* . . .

I hope to arrive . . . on Friday & at once commence with my battery working to Newfoundland . . .“

Kurz zuvor war die Verlegung des ersten noch unvollkommenen Atlantikkabels beendet worden. Thomson arbeitete jahrelang für die Verbesserung der Kabeltelegraphie.

$ 57 Bid DM 215

524 SPENGLER, Oswald, Geschichtsphilosoph, 1880–1936. Br.m.U. München 10. X. 1922. ⅔ S. kl.-folio. (30.—)

An den Schriftsteller Fritz Endres, den er um einen Besuch bittet.

525 STEPHENSON, Robert, englischer Lokomotiv-, Bahn- und Brückenbauer, 1793–1859. E.Br.m.U. Camden 15. VIII. 1838. 1½ S. gr.-4°. Mit Adresse und gestochenem Briefkopf: *London & Birmingham Railway. Engineering Department. Camden Station.* Falteneinrisse ausgebessert. (300.—)

An R. B. Dockray, Railway Office, in Birmingham. „*I have noted a minute about a spring buffer at the end of the arrival line . . .*“

Mit der Zeichnung eines Prellbocks in Vorder- und Seitenansicht.

248. Kelvin (William Thomson, Baron). A.l.s., 1½ pp. 8vo., to the Chancellor of the University of Glasgow. May 12, 1900.
($13.20) £5. 10. 0.
Accepting an invitation to deliver an address on James Watt. March 1970 - DevaldMuir

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Date 12.5.1900

Length 1½ pp. 8vo

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Takeley . Bishop's Stortford . Herts

London, Aug. 16, 1858

My Dear Sir:

I wrote to Mr. Whitehouse on Saturday and enclosed a paper of directions for you and Anderson, which I presume you will have got before this reaches you. If not, ask Mr. Whitehouse and he will at the same time point out where the battery is to be put. There will be a great crowd of boxes now that our things and the others have come from Plymouth, and more additional accommodation will be necessary. Look to this and try to get a safe place,under cover, in the slate works where some of them can be put in as convenient a position as possible. I am anxious that the box from White & Barr containing the new keyboard should be in a safe place, convenient for unpacking. I have it ready to open but do not open it till I come.
The boxes from Plymouth (Worth's and Croydon's) you may carefully open yourself. The crates containing the battery cells need not be opened at present as they will not be wanted probably.

I particularly wish 200 of the tray cells in perfect condition, to be ready for me when I arrive on Friday, and I hope you will manage to secure this. The nearer to the instrument room the better.

I have 12 different stout thick covered gutta percha wires ready to lead from different points of the battery, to the instrument room. You know how to connect them (by flat copper plates pressed in between a copper try to the zinc below it, when you have not a wire soldered to the copper tray) these wires to be all numbered distinctly. and the end in the instrument room to be brought to the gutta percha slip bearing studs Mr. Morrison prepared for the Agamemnon,which you had better fix up on the end wall of the instrument room in my quarters.

I hope to arrive in good time on Friday and at once commence with the battery working to Newfoundland.

Yours truly,

W. Thomson

AUTOGRAPHE

de

Thomson

Sir William, Lord Kelvin

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1) L. a. s. 4 p. 8° London 23. VI. 1855

Sendet von Einladungen zu seinem wissenschaftlichen Konzert und erwähnt Hermite, Cayley, Sylvester und Ferrers.

2) /L.a.s., 18. Februar, 95, auf Papier The University Glasgow, bestätigt den Empfang eines Briefes und dankt für das Interesse, dass der Adressat an einigen seiner Schriften genommen hat.

4) William, Lord Kelvin, Physiker, geb. 26. Juni 1824 in Belfast, gest. 17. Dez. 1907 in London, studierte in Glasgow, Cambridge und Paris und wurde 1846 Professor der Physik in Glasgow. Seine erste Arbeit (1841) behandelte die Wärmeleitung in homogenen festen Körpern und deren Beziehung zur mathematischen Theorie der Elektrizität. Sie erschien mit der Abhandlung über die Verteilung der Elektrizität auf sphärischen Leitern (1848) und vielen andern Arbeiten aus dem Gebiete der Elektrizität und des Magnetismus in dem Werke »Reprint of papers on electrostatics and magnetism« (Lond. 1862, 2. Aufl. 1884; deutsch von Levy und Weinstein, Bert. 1890). T. lieferte auch verschiedene Elektrometer, von denen das Quadrantelektrometer für die feinsten elektrischen Messungen große Verbreitung gefunden hat, sein Spiegelgalvanometer machte in der Geschichte der unterseeischen Telegraphie Epoche. Er konstruierte auch einen Kompaß mit geringer Deviation, einen Tiefseemesser und vervollkommnete die elektrotechnischen Meßinstrumente. Auf dem Gebiete der mechanischen Wärmetheorie haben seine Arbeiten neben denen von Clausius am meisten zur Entwickelung der Theorie beigetragen. Clausius verwertete zuerst 1850 die aus dem von Mayer 1842 ausgesprochenen Prinzip von der Erhaltung der Kraft sich ergebenden Folgerungen in der mathematischen Behandlung der Wärmeerscheinungen, dann aber gehen die Arbeiten von T. und Clausius einander so nahe parallel, daß es manchmal schwer fällt, zu unterscheiden, welcher von beiden Forschern gewisse Sätze zuerst entwickelt hat. T. entwickelte eine mechanische Theorie der chemischen Zersetzung durch den elektrischen Strom, eine Theorie der Thermoströme und entdeckte die positive und negative Fortführung der Wärme durch den galvanischen Strom. Seine theoretischen und experimentellen Arbeiten über unterseeische Telegraphie, ganz besonders seit 1858, als das erste gelegte Kabel zwischen England und Amerika seine Dienste so bald versagte, haben zu den später erreichten Erfolgen auf das erheblichste beigetragen. In Anerkennung dieser Leistungen wurde er bei der Rückkehr von der Legung des Kabels 1866, an der er sich selbst beteiligt hatte, zum Ritter ernannt. 1890 wurde er Präsident der Royal Society, und 1892 wurde er zum Lord Kelvin ernannt. 1899 trat er in den Ruhestand. Sein Bildnis s. Tafel »Physiker II«. Er lieferte auch Untersuchungen über Ebbe und Flut, über die Gestalt der Erde, über die Frage, ob das Innere der Erde fest oder flüssig ist, und über manche Frage der theoretischen Mechanik. Seine Untersuchungen über das spezifische Gewicht des Luftstickstoffs und des aus chemischen Verbindungen abgeschiedenen Stickstoffs führten zur Entdeckung des Argons. T. veröffentlichte: »On the electrodynamic properties of metals« (1855); »Navigation, a lecture« (1876); »Mathematical and physical papers« (1882—90, 3 Bde.); »Treatise on natural philosophy« (mit Tait, Bd. 1 in 2 Tln., 2. Aufl. 1879—83; deutsch von Helmholtz und Wertheim: »Handbuch der theoretischen Physik«, Braunschw. 1874, unvollendet); »Lectures and addresses« (1889—91, 3 Bde.; Bd. 1 deutsch: »Konstitution der Materie«, Bert. 1891). Seine 1884 an der Hopkins-Universität in Baltimore gehaltenen Vorlesungen erschienen u. d. T.: »Baltimore lectures on molecular dynamics and the wave theory of light« (1904). Er redigiert seit 1846 das »Cambridge and Dublin Mathematical Journal«. Vgl. »Lord Kelvin, Professor of natural philosophy in the University of Glasgow 1846—1899«, mit einem Essay von Fitzgerald (Lond. 1900); Munro, Lord Kelvin (das. 1902). — Sein Bruder James T., geb. 16. Febr. 1822 in Belfast, 1872—89 Professor der Ingenieurwissenschaften in Glasgow, gest. 8. Mai 1892, entdeckte, daß der Gefrierpunkt des Wassers durch Druck erniedrigt wird und gründete hierauf eine Gletschertheorie.

University of Glasgow.

Celebration of Jubilee of Lord Kelvin, 15th and 16th June, 1896.

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FRANK M'CLEAN, LL.D., F.R.S., Tunbridge Wells
Address: c/o Mrs. Galbraith, 3 Blythswood Square, Glasgow

University of Glasgow.

Jubilee of the Rt. Hon. Lord Kelvin,

16th June, 1896.

Professor GAIRDNER, M.D., LL.D., F.R.S., in the Chair.

1. PRAYER.

2. PRESENTATION OF ADDRESSES TO LORD KELVIN—Delegates announced by Professor Story.

   (*a*) Delegates from Austro-Hungary, Belgium, Denmark, France, Germany, Holland, Italy, Mexico, Russia, Sweden, Switzerland, United States of America, Canada, India, New South Wales.

   (*b*) Universities and Colleges of the United Kingdom.

   (*c*) Societies, Institutions, etc.

   (*d*) Students' Representative Councils of the Four Scottish Universities.

   (*e*) Students of Glasgow University.

   (*f*) General Council of Glasgow University.

   (*g*) Senatus Academicus.

3. CONFERRING OF DEGREE OF LL.D. ON LORD KELVIN.

MUSIC.

The Right Hon. LORD KELVIN, LL.D., F.R.S., in the Chair

4. CONFERRING OF DEGREE OF LL.D. ON FOREIGN DELEGATES.

5. LORD KELVIN'S REPLY TO ADDRESSES.

6. BENEDICTION.

JOHN M'INTYRE, M.D., Odiham, Hants
Address: c/o Sir Andrew Maclean, Viewfield, Partick.

Professor SIMON NEWCOMB, of Johns Hopkins University, Baltimore, and Nautical Almanac Office, Washington
Address: c/o John Fyfe, Esq., 1 Montgomerie Drive, Kelvinside

Professor PERRY, F.R.S., London
Address: c/o W. G. Crum, Esq., of Thornliebank

Rev. Dr. PORTER, Master of Peter House, Cambridge
Address: c/o W. G. Crum, Esq., Thornliebank

W. H. PREECE, F.R.S., General Post Office, London
Address: c/o Francis Braid, Esq., 32 Westbourne Gardens, Kelvinside

EMANUEL RISTORI, Esq., London
Address: Central Station Hotel, Glasgow

EDWARD J. ROUTH, D.Sc., LL.D., F.R.S., Peter House, Cambridge
Address: Central Station Hotel

Sir WILLIAM RUSSELL, Adare, Ireland
Address:

Rt. Hon. LORD SHAND, LL.D., London
Address:

ALEX. SIEMENS, ESQ., London
Address: Central Station Hotel, Glasgow

Major-General SIR R. M. SMITH, K.C.M.G., Edinburgh
Address: c/o Sir John S.-Maxwell, Pollok House, Pollokshaws

Professor J. J. SYLVESTER, M.A., D.C.L., F.R.S., Oxford
Address: c/o John Fyfe, Esq., 1 Montgomerie Drive, Kelvinside

JAMES THOMSON, M.A., C.E., Newcastle-on-Tyne
Address: c/o Mrs. Allen, 1 St. James Street, Hillhead.

Professor W. A. TILDEN, Sc.D., F.R.S., London
Address: c/o Wm. Bottomley, Esq., 15 University Gardens, Hillhead

Admiral WHARTON, F.R.S., Admiralty, London
Address: c/o Sir Charles Cameron, Balclutha, Greenock.

OLD UNIVERSITY
(High Street)

NEW UNIVERSITY
Gilmorehill.

1846 1896

JUBILEE OF

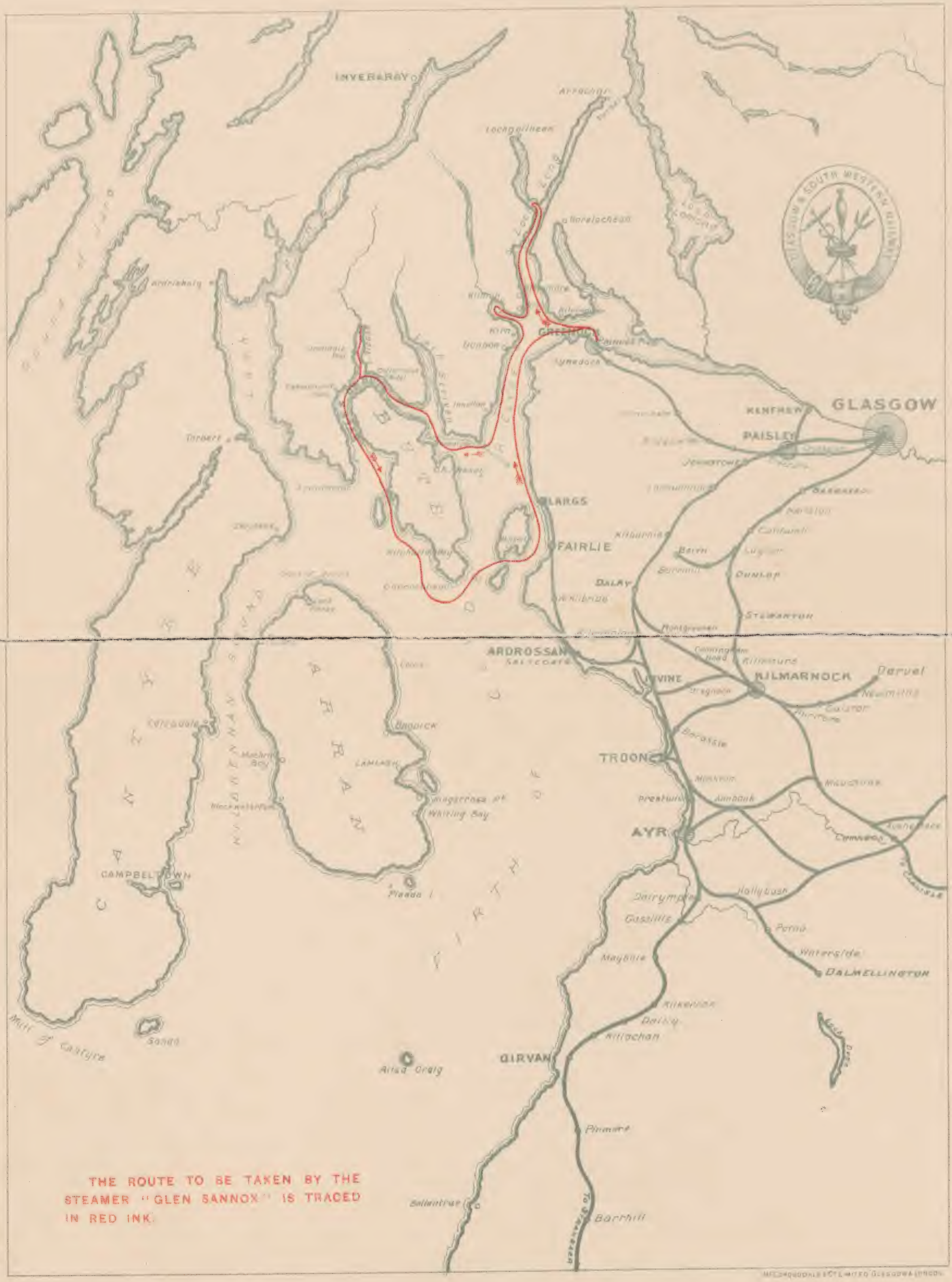
THE RIGHT HON. LORD KELVIN.

CRUISE : OF : THE
GLASGOW : & : SOUTH-WESTERN
RAILWAY : Co^ys : STEAMER
"GLEN : SANNOX"

ON 17TH JUNE 1896

P.S. GLEN-SANNOX

McGORQUODALE & Co LIMITED GLASGOW & LONDON.


INVERARAY
Arrochar
Locgoilhead
Loch Long
Loch Lomond
Glenfalloch
Ardrishaig
Kilmun
Strone
Dunoon
GREENOCK
Cloch Point
Lynedoch
KENFREW
GLASGOW
PAISLEY
Johnstone
Torbert
LARGS
FAIRLIE
Kilbunnie
Beith
Lugton
Dunlop
Stewarton
DALRY
Montgreenan
ARDROSSAN
Seacoate
Cunningham Head
Kilmaurs
IRVINE
KILMARNOCK
Darvel
Newmilns
Galston
Hurlford
Stewarton
Carradale
Machrihanish Bay
Brodick
LAMLASH
Whiting Bay
Blackwaterfoot
TROON
Prestwick
Monkton
Annbank
AYR
Mossblown
Tarbolton
Cumnock
CAMPBELTOWN
Pladda I.
Dalrymple
Gasslitte
Hollybush
Patna
Waterside
DALMELLINGTON
Maybole
Kilkerran
Dailly
Killochan
Mull of Cantyre
Sanda
Ailsa Craig
GIRVAN
Pinmore
Ballantrae
To Stranraer
Barrhill
THE ROUTE TO BE TAKEN BY THE STEAMER "GLEN SANNOX" IS TRACED IN RED INK.

Wm. THOMSON

AUG. 16, 1858

London, Aug. 16, 1858

My Dear Sir:

I wrote to Mr. Whitehouse on Saturday and enclosed a paper of directions for you and Anderson, which I presume you will have got before this reaches you. If not, ask Mr. Whitehouse and he will at the same time point out where the battery is to be put. There will be a great crowd of boxes now that our things and the others have come from Plymouth, and more additional accommodation will be necessary. Look to this and try to get a safe place, under cover, in the slate works where some of them can be put in as convenient a position as possible. I am anxious that the box from White & Barr containing the new keyboard should be in a safe place, convenient for unpacking. I have it ready to open but do not open it till I come.
The boxes from Plymouth (Worth's and Croydon's) you may carefully open yourself. The crates containing the battery cells need not be opened at present as they will not be wanted probably.

London Aug 16, 1858

My dear Sir
I wrote to Mr Whitehouse on Saturday and enclosed a paper of directions for you and Anderson, which I presume you will have got before this reaches you. If not, ask Mr Whitehouse, and he will at the same time point out where the battery is to be put. There will be a great crowd of boxes now that our things and the others have come from Plymouth, and more additional accommodation will be necessary. Look to this, & try & get a safe place, under cover, in the

sketch works where some of them can be put in a movement of a portion as possible. I am anxious that the box from White & Bass, containing the new keyboard, should be in a safe place, & convenient for unpacking. Have it ready & open but do not open it, till I come. The boxes from Plymouth (Worth's & Croydon's) you may carefully open yourself. The crates containing the batteries cells need not be opened at present as they will not be wanted probably -

I particularly wish 200 of the tray cells, in perfect condition, to be ready for me when I come on Friday, & I hope you will manage to secure this. The nearer of the instrument room the better -

Have 12 different sort thick covered gutta percha wires, ready to lead from different parts of the battery & the instrument room - You

I particularly wish 200 of the tray cells in perfect condition, to be ready for me when I arrive on Friday, and I hope you will manage to secure this. The nearer to the instrument room the better.

I have 12 different stout thick covered gutta percha wires ready to lead from different points of the battery, to the instrument room. You know how to connect them (by flat copper plates pressed in between a copper try to the zinc below it, when you have not a wire soldered to the copper tray) these wires to be all numbered distinctly. and the end in the instrument room to be brought to the gutta percha slip bearing studs Mr. Morrison prepared for the Agamemnon, which you had better fix up on the end wall of the instrument room in my quarters.

I hope to arrive in good time on Friday and at once commence with the battery working to Newfoundland.

Yours truly,

W. Thomson

BANQUET

The Corporation and University
OF GLASGOW

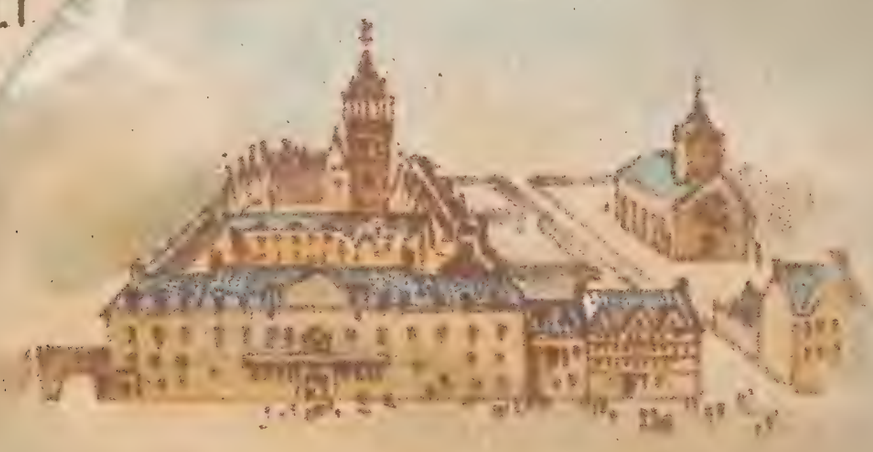
IN CELEBRATION OF THE

JUBILEE

To the Right Hon. Lord Kelvin,
D.C.L., LL.D., F.R.S., &c.

St Andrew's Halls
16th June, 1896.

The Honourable Lord Provost
Sir James Bell
BARONET



MACLURE, MACDONALD & Co. LITHRS

MENU.

Hors d'Œuvres, variés à la Russe.

East India Sherry — Tortue Claire au Gras Vert.

Marcobrunner — Saumon au Naturel, Sauce Mayonnaise.
Salad de Homard.

Riz de Veau à la Financière.
Côtelettes d'Agneau à la Pompadour.

Chaudfroid de Cailles Truffées.

Deutz & Geldermann Gold Lack, 1889 — Bœuf Rôti au Raifort.
Poulardes Braisées à la Chipolata.

Gigot de Marcassin à l'Espagnole.
Asperges à la Vinaigrette.

Chateau Margaux Port (Jubilee Vintage) — Charlotte Russe. Gelée au Liqueurs.
Gâteau à la Crème.

Pudding Glacé à la Nesselrode.

Liqueurs Old Cognac — Fraises et Dessert.

Café.

Music: { MR. MONTAGUE SMITH, ORGANIST. / HERR IFF'S ORCHESTRA.

TOASTS.

Her Majesty the Queen, - - — The LORD PROVOST.

The Prince and Princess of Wales and the other Members of the Royal Family, - - - - - - — The LORD PROVOST.

The Houses of Parliament, — The Right Hon. the LORD JUSTICE GENERAL OF SCOTLAND.

Replies, { Right Hon. LORD RAYLEIGH, D.C.L., LL.D., F.R.S. / JAMES A. CAMPBELL, LL.D., M.P.

Lord Kelvin, and Hearty Congratulations on the Attainment of his Jubilee, - - - - - - — The LORD PROVOST.

Reply—LORD KELVIN.

The Representatives present from other Universities and Learned Bodies, — Professor W. T. GAIRDNER, LL.D., F.R.S.

Replies, { His Excellency General AMIBALE FERRERO, Ambassador for Italy. / Sir JOSEPH LISTER, Bart., D.C.L., LL.D., President Royal Society. / Professor SIMON NEWCOMB, Washington, U.S.

The Corporation and University of Glasgow, - — The EARL OF ROSSE, K.P., D.C.L., Chancellor of the University of Dublin.

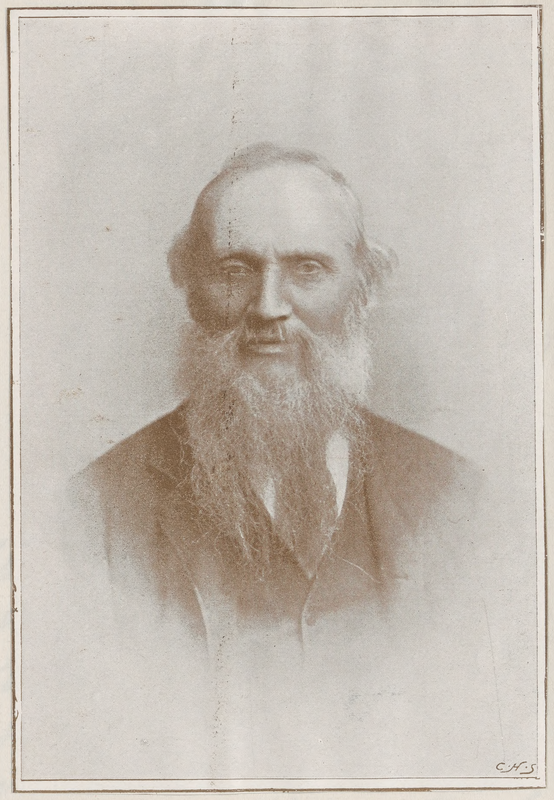
Replies, { The LORD PROVOST. / ROBERT BERRY, Esq., LL.D., Sheriff of Lanarkshire, Dean of the Faculties of the University.

The Lord Provost, - - - - Sir HENRY ROSCOE.

Reply—The LORD PROVOST.

n91

Lord Kelvin



LORD KELVIN'S JUBILEE.

LETTER FROM THE PRINCE OF WALES.

In connection with the celebration of Lord Kelvin's jubilee a graduation ceremony took place at Glasgow University yesterday, at which honorary degrees were conferred upon his Lordship and a large number of the representatives of foreign universities. The Bute Hall, in which the proceedings were held, was crowded by a distinguished audience. In the absence of the Chancellor (the Earl of Stair) and of the Very Rev. Principal Caird, the vice chancellor, it fell to the senior professor in the University to preside. This position Lord Kelvin occupies, but as it was impossible that he could discharge the duty, the chair at the opening was taken by Professor Gairdner, who comes next in the order of seniority. Professor Stewart, clerk of the Senate, read the following letter from Sir Francis Knollys, the secretary of the Prince of Wales:—"Dear Lord Kelvin,—The Prince of Wales desires me to send to you his warmest congratulations on your having attained the fiftieth year of your tenure of your professorship in the University of Glasgow. His Royal Highness is in most cordial sympathy with the eminent representatives of universities, learned societies, and other public bodies in different parts of this country and of foreign countries who have assembled to do you honour in the University which has for a long series of years, eventful for the rapid advance of science and its applications, enjoyed the high prestige derived from your close association with its work and from the valuable and brilliant contributions to science resulting from the researches carried on by yourself during the past half century within its walls. The Prince of Wales remembers with much satisfaction that he had the gratification seventeen years ago of presenting you with the medal instituted by the Society of Arts as a memorial of the Prince Consort, and awarded to men who have rendered pre-eminent service in the promoting of arts and manufacture and science. The work which you had at that time accomplished was but an earnest of the important researches to which you have since then devoted yourself so indefatigably, and he cherishes the sincere hope that you may long continue to enjoy the happiness derived from the most gratifying evidence that the high value of the service rendered by you through science to mankind is universally recognised and appreciated. Further, His Royal Highness desires me to repeat what he has already stated to the University authorities, that long-standing engagements in the South prevent him from having the pleasure of being present on the occasion of this interesting celebration." The reading of the letter was followed by prolonged cheers.

Addresses to Lord Kelvin were afterwards presented by the delegates who attended from Universities and scientific institutions in all parts of the world. The honorary degree of LL.D. was then formally conferred upon Lord Kelvin, and his Lordship thereafter, in his capacity of senior professor, took the chair, and performed the ceremony of bestowing the honorary degree of Doctor of Laws upon the following gentlemen:—Professor Cleveland Abbe, Columbian University, Washington; Professor C. Christiansen, Royal Danish Society of Science, Copenhagen; Professor Theodor Cleve, University of Upsala; General Annibale Ferrero, Italian Ambassador in London; Professor Dr. Isidor Fröhlich, Academy of Sciences, Buda-Pesth; Professor Lippmann, University of France, Paris; Professor Liversidge, M.A., F.R.S., University of Sydney; Professor Eleuthère Mascart, Collège de France, Paris; Professor Henri Moissan, University of France, Paris; Professor Simon Newcomb, of Johns Hopkins University, Baltimore, and Naval Almanac Office, Washington; Professor Nicholas Oumoy, of the University of Moscow; Professor Emile Picard, University of France, Paris; Professor George Quincke, University of Heidelberg; Professor Waldemar Voight, Royal Society of Science, Göttingen.

Lord Kelvin then addressed the gathering, and in the course of his remarks said that he had the honour of receiving that day a gracious message from the Prince of Wales, addresses from sister Universities in all parts of the world, from learned societies, academies, associations, and institutions for the advancement of pure and applied science; from municipal corporations and other public bodies, from submarine telegraph companies, and from their officers, his old comrades in the work; from the students, professors, and scientific workers of England, Scotland, and Ireland, and other countries, including his revered and loved St. Peter's College, Cambridge, his twenty Baltimore co-efficients of 1884 in the work of trying to understand light and ether and crystals, and his old Japanese students of Glasgow University, now professors in the University of Tokio or occupying posts in the civil service and engineering service of Japan. These addresses contained liberal and friendly appreciation of all his published mathematical and physical papers, beginning in 1840 and ending-not yet he hoped.—(Applause.) His work had been carried on in the faith that the time was to come when much that was now dark in physical science would be seen bright and clear by their followers, if not by themselves. He now asked the distinguished men who had honoured him by presenting these addresses to accept for themselves personally, and for the societies represented by them, his warmest thanks for the great treasure which he had thus received—goodwill, kindness, friendship, sympathy, encouragement for more work,—a treasure of which no words could adequately describe the value.

The Corporation and the University of Glasgow entertained Lord Kelvin and the distinguished delegates attending the jubilee celebrations at a banquet in St. Andrew's Hall in the evening. The Lord Provost (Sir James Bell) presided, and the company included Lord Kelvin, General Ferrero (the Italian Ambassador), Lord Rayleigh, Professor Newcomb (Washington), Lord Overtoun, the Lord Justice General of Scotland, Professor Picard (Paris), Lord Shand, General Sir Archibald Alison, Bart., the Earl of Rosse (Chancellor of the University of Dublin), Sir Joseph Lister, Bart., Lord Napier and Ettrick, Professor Quincke (Heidelberg), Dr. Gill (Astronomer Royal, Cape of Good Hope), Professor Abbe (Washington), and Mr. James A. Campbell, LL.D., M.P.—The Lord Provost proposed the toast of the evening, "The health of Lord Kelvin." Lord Kelvin, in reply, said he might perhaps rightly feel pride in knowing that the University and city of Glasgow had joined in conferring on him the great honour of holding that jubilee, and that so many friends and so many distinguished men, friends and comrades, day labourers in science, had come from near and far to assist in its celebration, and that congratulations and good wishes had poured in on him by letter and telegram from all parts of the world. He did feel profoundly grateful, but when he thought how infinitely little was all that he had done he could feel no pride—only the great kindness of his scientific comrades, and of all his friends in crediting him with so much. One word would characterise the result of the most strenuous of the efforts for the advancement of science that he had made perseveringly during 55 years. That word was failure. He knew no more of electric and magnetic force, or the relation between ether, electricity, and ponderable matter, or of chemical affinity, than he knew and tried to teach to his students of natural philosophy fifty years ago in his first session as professor. Something of sadness must come of failure, but in the pursuit of science inborn necessity to make the effort brought with it much of the *certaminis gaudia* that saved the naturalist from being wholly miserable, and perhaps even allowed him to be fairly happy in his daily work. And what splendid compensations for philosophical failures they had in the admirable discoveries, by observation and experiment, of the properties of matter, and in the exquisitely beneficent applications of science to the use of mankind with which these fifty years had so abounded.

DSI

William Thomson

1st Lord Kelvin F.R.S. LLD DCL &c &c

President of Royal Society since 1890

2nd Wrangler at Cambridge 1845

and Fellow of Peterhouse.

Elected Professor of Natural Philosophy, Glasgow 1846

and has held it 50 years.

Edited Cambridge & Dublin Mathematical Journal for 11 years.

He has made many wonderful discoveries in

electrical science.

President of British Association, Edinburgh 1871

Grand Officer of Legion of Honour, France

German Order pour le Merite

Foreign Associate of French Academy 1877

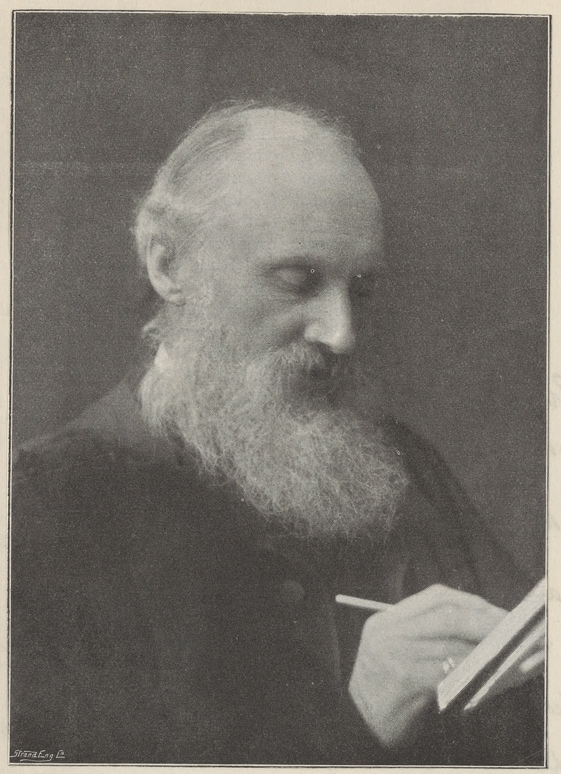
Inventor of improved ships Compass and Steam Steering Gear

and of an apparatus for sounding the log to 100

Fathoms during a ships voyage and while she is

going full speed.

DSI

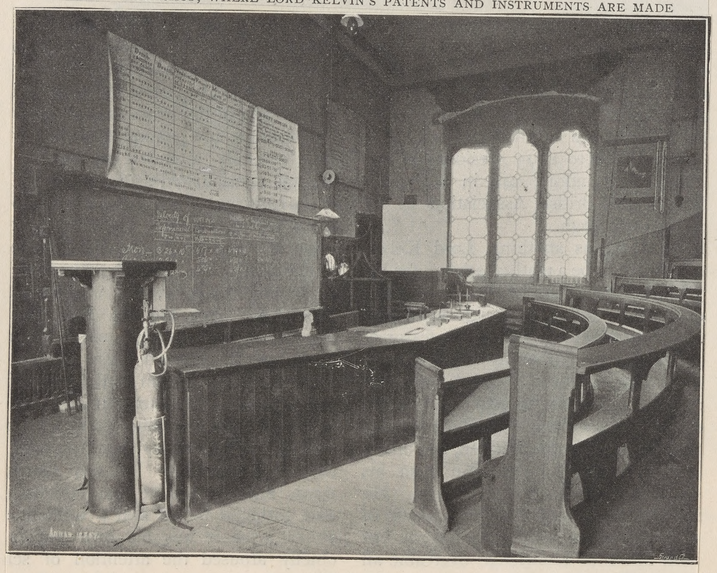


(From a photograph by T. & R. Annan & Sons, Glasgow)

GLASGOW UNIVERSITY, FROM KELVINGROVE PARK

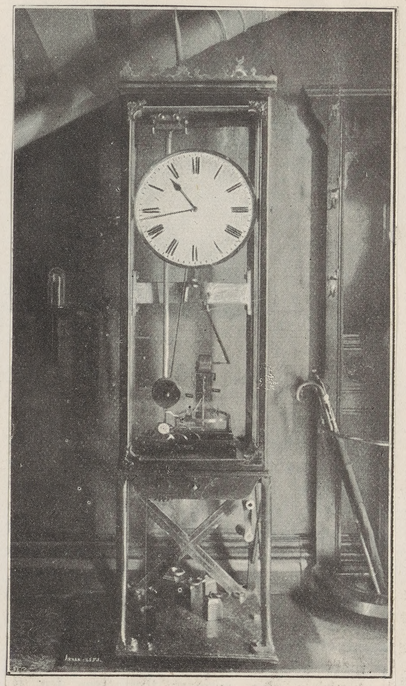
(From a photograph by T. & R. Annan & Sons, Glasgow)

WHITE'S WORKSHOP, WHERE LORD KELVIN'S PATENTS AND INSTRUMENTS ARE MADE



(From a photograph by T. & R. Annan & Sons, Glasgow)

PART OF LORD KELVIN'S CLASS-ROOM



(From a photograph by T. & R. Annan & Sons, Glasgow)

ELECTRIC CLOCK IN HALL OF LORD KELVIN'S HOUSE